

## Herbicide application timing in chickpeas

Drew Lyon, Brianna Cowan, Rod Rood and Henry Wetzel

A field study was conducted on the WSU Cook Agronomy Farm near Pullman, WA to evaluate different herbicide application timings for the control of broadleaf weeds in chickpeas.

The soil at this site is a Palouse silt loam with pH of 5.2 and organic matter content of 3.7%.

Fall pre-plant (fall PREPLA) herbicide applications took place on October 31, 2013 using a CO<sub>2</sub> backpack sprayer set to deliver 15 gpa at 3 mph and 30 psi. The air temperature at the time of application was 43°F, relative humidity was 63% and the wind



was out of the southwest at 1 mph. The pre-plant (PREPLA) application took place on March 25 using the same sprayer specifications. The air temperature was 51°F, relative humidity was 39% and the wind was out of the southwest at 2 mph. Mayweed chamomile (a.k.a. dog fennel) was present and was approximately 1-inch in diameter. On May 2, 'Sierra' chickpeas were planted at a rate of 200 lb/acre at a depth of 2 inches using a Monsosem vacuum planter with a 10-inch row spacing. The following day, an application of glyphosate at 32 fl oz/acre plus ammonium sulfate at 17 lb/100 gal finished spray solution was applied to control emerged weeds. The post-plant, pre-emerge (POSPRE) spray application took place on May 4 using the same sprayer specifications. The wind was still, relative humidity was 49% and the air temperature was 53°F.

Although there were significant treatment differences for visible crop injury on June 15, observed injury levels never exceeded 5%. The only treatment providing acceptable control of mayweed chamomile in chickpeas was the Spartan<sup>®</sup>4F treatment applied pre-plant on March 25, approximately five weeks prior to planting. This treatment received 0.56 in. of rain within four days of application and a total of 1.72 in. of rain by planting time. The post-plant, pre-emerge treatment of Spartan received 0.51 in. of rain within five days of application, but only a total of 0.81 in. over the first five weeks after application. Although there were statistically significant treatment differences for crop injury, no commercially meaningful differences were observed.

The primary goal of this study was to see if fall or early spring herbicide application timings could reduce the risk for injury in the winter wheat crop following chickpeas while still providing acceptable weed control in chickpeas. Winter wheat was seeded into the plot area on November 6 and we will check for crop injury and yield reductions in the 2015 wheat crop. Since only Spartan applied spring pre-plant provided acceptable weed control in the chickpeas, our attention will be focused on any observed differences in crop injury or grain yield amongst the various Spartan herbicide treatments.

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			June 25	
				Mayweed
			Crop	chamomile
Treatment	Rate	Timing <sup>a</sup>	injury	control
	oz pr/a		-----%	
Lorox DF	20	fallPREPLA	0	4
Lorox DF	20	PREPLA	3	46
Lorox DF	20	POSPRE	0	38
Metribuzin	8	fallPREPLA	5	8
Metribuzin	8	PREPLA	0	33
Metribuzin	8	POSPRE	0	44
Spartan 4F	8	fallPREPLA	1	33
Spartan 4F	8	PREPLA	1	84
Spartan 4F	8	POSPRE	0	46
Valor <sup>®</sup> SX	2	fallPREPLA	0	28
Valor SX	2	PREPLA	0	25
Valor SX	2	POSPRE	1	10
Nontreated check	--	--	--	--
LSD (5%)			2	37

<sup>a</sup> FallPREPLA, PREPLA and POSPRE treatments were applied Oct 31, 2013 March 25 and May 4; respectively.